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## Considerations Regarding Novel H1N1 Flu Virus in Obstetric Settings

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*This document has been developed to provide guidance for prevention and management of novel H1N1 flu infection in inpatient and out-patient obstetric settings. Severe illnesses among pregnant woman and infants have been reported in this outbreak (<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5818a3.htm>), although the epidemiology and spectrum of illness among pregnant woman and infants are not fully understood at this time and are under investigation. Prevention of infection with novel influenza A (H1N1) virus in pregnant women and infants is the highest priority message in this guidance. Healthy pregnant women should have access to prenatal care and labor and delivery services in settings where they can be separated from persons who are ill or potentially ill with novel H1N1 flu infection. In addition, a cautious approach to the management of neonates with ill mothers is recommended which includes isolation and close observation. Recommendations are interim, based on current knowledge of the novel H1N1 flu outbreak in the United States, and may be revised as more information becomes available.*

### Background

Human infections with novel influenza A (H1N1) (initially referred to as “swine flu” or novel H1N1 flu) were first identified in April of 2009. The epidemiology and clinical presentations of these infections are currently under investigation. Initial findings indicate that this virus causes a spectrum of illness that is similar to that caused by seasonal influenza viruses. While many infections with novel influenza A (H1N1) virus are relatively mild, some persons infected with this virus have had severe or even fatal infections. There are insufficient data available at this time to determine which groups of people are at higher risk for complications of novel H1N1 flu virus. However, over half of persons who have required hospitalization because of novel influenza A (H1N1) virus infection have had an underlying medical condition or have been pregnant.

In addition, evidence from the previous pandemics of 1918-1919 and 1957-1958 and from seasonal influenza suggests that pregnant women are likely to be at increased risk of morbidity and mortality related to infection with this novel flu virus. The impact of novel H1N1 flu on the newborn is unknown, but based on previous experience, newborns are expected to be at increased risk of severe illness.

Over 4 million live births occur in the United States each year and approximately 99% of these births occur in hospital settings. In addition, pregnant women frequently present to healthcare settings for prenatal care. Therefore, guidance related to control of novel H1N1 flu infection in these obstetric healthcare settings is needed for facilities that provide care for pregnant women.

### General Considerations

A key concept for obstetric settings is to keep healthy pregnant women, in both inpatient and outpatient settings, separated from persons who are ill or potentially ill. Facilities should have a mechanism to identify and segregate ill patients, visitors, and staff.

Prenatal care, labor, and delivery services should be provided to healthy pregnant women in settings where the risk of exposure to novel H1N1 flu has been minimized.

Healthy pregnant women and infants who have not been in close contact with persons with suspected, probable, or confirmed novel H1N1 flu can be managed in the usual way in compliance with established infection control guidance. They should not be subject to the special considerations noted below.

### Pregnant Women Exposed to H1N1

Post exposure antiviral chemoprophylaxis can be considered for pregnant women who are close contacts of persons with suspected or laboratory confirmed novel influenza A (H1N1) virus infection. If chemoprophylaxis medications are being taken, exposed pregnant women ([http://www.cdc.gov/h1n1flu/clinician\\_pregnant.htm](http://www.cdc.gov/h1n1flu/clinician_pregnant.htm)) can be managed in the usual way in compliance with established infection control guidance. Women who have symptoms of influenza-like-illness (defined as fever (temperature of 100°F [37.8°C] or greater) and a cough and/or a sore throat in the absence of a KNOWN cause other than influenza) should be treated as if they had influenza.

## Pregnant Women With Confirmed, Probable, or Suspected H1N1 Illness

In general, guidance for control of novel H1N1 flu infection in obstetric settings is consistent with that in other healthcare settings but also includes special considerations for prevention of infection in the newborn. Infants are known to be at higher risk of severe illness from seasonal influenza virus infections. Based on this experience, infants are also considered to be at higher risk for severe illness from novel influenza A (H1N1) virus infection. Because very little is known about prevention of novel H1N1 flu infection in infants, these recommendations are intended to minimize the potential for exposure to novel influenza A (H1N1) viruses when an ill pregnant woman delivers her baby.

Special considerations in obstetric settings when a pregnant woman has confirmed, probable or suspected novel H1N1 flu (adapted from recommendations for seasonal influenza: <http://www.cdc.gov/flu/professionals/infectioncontrol/peri-post-settings.htm> (<http://www.cdc.gov/flu/professionals/infectioncontrol/peri-post-settings.htm>)) include:

- Initiate appropriate antiviral treatment as soon as possible.
- Isolate the ill mother from healthy pregnant women as mentioned above.
- Place a surgical mask on the ill mother during labor and delivery, if tolerable, in order to decrease exposure of the newborn, healthcare personnel, and other labor and delivery patients to potentially infectious respiratory secretions.
- Place the ill mother in isolation after delivery ([http://www.cdc.gov/h1n1flu/guidelines\\_infection\\_control.htm](http://www.cdc.gov/h1n1flu/guidelines_infection_control.htm) ([http://www.cdc.gov/h1n1flu/guidelines\\_infection\\_control.htm](http://www.cdc.gov/h1n1flu/guidelines_infection_control.htm))). The mother who has influenza-like-illness (<http://www.cdc.gov/h1n1flu/casedef.htm> (<http://www.cdc.gov/h1n1flu/casedef.htm>)) at delivery should consider avoiding close contact with her infant until the following conditions have been met: she has received antiviral medications for 48 hours, her fever has fully resolved, and she can control coughs and secretions. Meeting these conditions may reduce, but not eliminate, the risk of transmitting influenza to the baby. Before these conditions are met, the newborn should be cared for in a separate room by another person who is well, and the mother should be encouraged and assisted to express her milk. Breast milk is not thought to be a potential source of influenza virus infections. As soon as all conditions are met, the mother should be encouraged to wear a facemask, change to a clean gown or clothing, adhere to strict hand hygiene and cough etiquette when in contact with her infant, and begin breastfeeding (or if not able to breastfeed, bottle feeding). She should continue these protective measures, both in the hospital setting and at home, for at least 7 days after the onset of influenza symptoms ([http://www.cdc.gov/h1n1flu/guidance\\_homecare.htm#c](http://www.cdc.gov/h1n1flu/guidance_homecare.htm#c) ([http://www.cdc.gov/h1n1flu/guidance\\_homecare.htm#c](http://www.cdc.gov/h1n1flu/guidance_homecare.htm#c))). If symptoms last more than 7 days, she should discuss the symptoms with her doctor. Protective measures might need to be continued until she is symptom-free for 24 hours. People who are once again well 7 days after getting sick are thought to be at low risk for transmitting the virus to others.

## Newborns of Ill Mothers

Because the risk for transmission of novel H1N1 flu from mother to fetus is unknown, the newborn should be considered to be potentially infected if delivery occurs during the 2 days before through 7 days after illness onset in the mother. Infection control procedures developed for novel H1N1 flu should be used for the newborn throughout the hospital stay ([http://www.cdc.gov/h1n1flu/guidelines\\_infection\\_control.htm](http://www.cdc.gov/h1n1flu/guidelines_infection_control.htm) ([http://www.cdc.gov/h1n1flu/guidelines\\_infection\\_control.htm](http://www.cdc.gov/h1n1flu/guidelines_infection_control.htm))). The newborn should be closely monitored for signs and symptoms of influenza. If signs or symptoms develop, testing should be performed, infection control measures should be continued, and treatment with anti-influenza medications should be considered (<http://www.cdc.gov/h1n1flu/childrentreatment.htm> (<http://www.cdc.gov/h1n1flu/childrentreatment.htm>)).

Oseltamivir is approved for prevention of influenza in patients 1 year of age and older; however, an emergency use authorization (EUA) has been issued for oseltamivir for influenza treatment and prevention in patients less than 1 year of age (<http://www.cdc.gov/h1n1flu/recommendations.htm#C> (<http://www.cdc.gov/h1n1flu/recommendations.htm#C>)).

Chemoprophylaxis of infants less than 3 months of age is not typically recommended, as there are very limited data available on the safety and effectiveness of chemoprophylaxis for infants less than 3 months. However, in situations which are judged to be critical, chemoprophylaxis with oseltamivir can be considered.

## Infant Feeding

Breastfeeding should be protected and supported at all times because of the protection from respiratory infection that breast milk provides to the infant. The mother with influenza-like-illness should be encouraged and assisted to express her milk. During this time, the infant should be fed the mother's expressed milk by another person who is well. Treatment or chemoprophylaxis with antiviral medications is not a contraindication to breastfeeding. For other information related to infant feeding, please see <http://www.cdc.gov/h1n1flu/breastfeeding.htm> (<http://www.cdc.gov/h1n1flu/breastfeeding.htm>).

## Visitors

Limit visitors to mothers in isolation for novel influenza A (H1N1) virus infection to persons who are necessary for the patients’ emotional well-being and care ([http://www.cdc.gov/h1n1flu/guidelines\\_infection\\_control.htm](http://www.cdc.gov/h1n1flu/guidelines_infection_control.htm) ([http://www.cdc.gov/h1n1flu/guidelines\\_infection\\_control.htm](http://www.cdc.gov/h1n1flu/guidelines_infection_control.htm))).

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